

Abstract

5 Data structures, systems, and methods are aspects of pattern recognition
using observable operator models (OOMs). OOMs are more efficient than
Hidden Markov Models (HMMs). A data structure for an OOM has
characteristic events, an initial distribution vector, a probability transition matrix,
an occurrence count matrix, and at least one observable operator. System
applications include computer systems, cellular phones, wearable computers,
10 home control systems, fire safety or security systems, PDAs, and flight systems.
A method of pattern recognition comprises training OOMs, receiving unknown
input, computing matching probabilities, selecting the maximum probability, and
displaying the match. A method of speech recognition comprises sampling a
first input stream, performing a spectral analysis, clustering, training OOMs, and
15 recognizing speech using the OOMs.

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